Pusher Furnaces
High Volume Thermal Treatment System
Pusher Furnaces

Flexible, High Production Design Offers Reliability, Repeatability and Exceptionally Precise Control

INNOVATIVE FEATURES MAKE THE AFC-HOLCROFT DIFFERENCE
AFC-Holcroft is the acknowledged leader in pusher furnace technology. Every AFC-Holcroft pusher furnace incorporates many unique and innovative features pioneered by us, and can only be found on AFC-Holcroft equipment. Our pusher furnace design features are often imitated, but never duplicated.

AFC-Holcroft pusher furnace designs range from single to six row designs for high production volumes. Depending on the amount of process control desired, furnace chambers may be combined into a single unit or separated into a multi-chamber design to provide for independent and isolated chambers for maximum control over temperature and atmosphere.

Multiple quench systems can be provided on a single pusher furnace for increased processing flexibility. For example:
- Hot or cold oil quench.
- Austemper/Marquench - molten salt quench.
- Intensive water quench.
- Water, polymer, or caustic quench.
- High pressure gas quench.
AFC-Holcroft designed pusher furnace systems are recognized in the industry for ease of maintenance and up-time reliability. The many outstanding design and construction features of AFC-Holcroft furnaces add up to an exceptionally high degree of operating efficiency, coupled with precise control over the entire heat treat process. As a result, you’ll benefit from a consistently high standard of quality at maximum production rates and economy. AFC-Holcroft pusher furnaces are custom-designed to meet your precise needs using our proven standard building-block components and modular concepts.

Floor plan arrangements
With AFC-Holcroft’s modular design concepts, floor plan arrangements can be made as simple as straight-through, in-line single-row units to multi-row units with side entrance and exit designs to fit your available floor space.

Tray hearth skid rails
- Pioneer in the use of silicon carbide and high-alumina skid rail materials.
- Segmented rail design allows for easy, localized replacement.
- Alloy rail systems available for specific applications.

Entrance/exit vestibule
- Industry-proven AFC-Holcroft exclusive “Alligator” outer door systems provide reliable operation and automatic resealing in the event of a pressure buildup.
- Our bottom-load design reduces atmosphere gas consumption and minimizes furnace atmosphere disruption.

Captive chain tray transfer mechanism
- Horizontal or vertical arrangements available.
- Chain retracts into a sealed housing to prevent overheating and extend service life.
- Reduces floor space requirements alongside the furnace.

Main pusher mechanism
- The smooth motion of our ball-screw design is far superior to hydraulic cylinder pusher systems.
- Automatically retracts in the event of a jam or overload.

Tray positioner
Exclusive AFC-Holcroft design automatically adjusts the main pusher stroke to compensate for thermal expansion and permanent tray growth.

Atmosphere circulation systems
- Roof and single-flow sidewall fan systems.
- AFC-Holcroft’s patented dual-flow sidewall fan systems.
- Available with air, water, or oil cooling.

Heating systems
- Single-ended and U-type radiant tube systems mounted horizontally or vertically are compatible with either fossil fuel burners or electric elements.

Large-diameter radiant tubes increase physical strength and permit lower heat dissipation rates for longer service life.
- Piloted or spark ignited burner systems available.
- Internal and external recuperators can be added to reduce fuel consumption by as much as 30%.

Quench circulators
- Agitation systems available for oil, water, polymer, or molten salt.
- Standard propeller-type systems are provided for medium density loads.
- Our exclusive submerged pump-style agitator is unrivaled for dense load quenching.
**ADVANCED ENGINEERING TOOLS**, including Computational Fluid Dynamics (CFD) modeling, allow AFC-Holcroft to assist customers by analyzing problems, optimizing fixturing designs and equipment – thereby maximizing return on their investment.

CFD analysis can improve design efficiency, reduce costs and enable tighter process tolerances.